WOMT Notes

March 24, 2015 Meeting

1. *General Information*:

CVP

- *Keswick Release to upper Sacramento River @ 3250 cfs*
- *Nimbus Release to lower American River @ 700 cfs, decreasing to 500 cfs on March 26th*
- *Goodwin Release to Stanislaus River is increasing for pulse flow on Stanislaus to 1500 cfs on March 25th to March 28th, then dropping back down to 200 cfs by April 2.*
- *Jones Pumping Plant @ 950 cfs*
- *Delta Cross-Channel Gates: Closed.*
- *Federal Share of San Luis 396 TAF*

SWP

- *Oroville Release to Feather River @ 800 cfs*
- *Clifton Court Allotment @ 550 cfs*
- *State Share of San Luis @ 972 TAF*

Delta

- *Freeport Flow approx. 6,900 cfs*
- *Vernalis Flow approx. 460 cfs and increasing*
- *Delta Outflow approx. 4,700 cfs*

OMR (cfs):

- INDEX (as of 3/21/2015):

  5 day average: -1720 cfs,

  14 day average: - 2883 cfs

- USGS (as of 3/7/2015):

  5-day: -1786 cfs

  14-day: -2992 cfs

FISHERY UPDATES:

DOSS Update – *Met today; no advice. DOSS Estimates of Fish Distribution*

DOSS estimates of the current distribution of listed Chinook, as a percentage of the population, are based on recent monitoring data and historical migration timing patterns. The table below reflects current distribution. Without a storm, Chinook salmon still upstream of the delta may not have high chances of outmigration success due to deteriorating migratory conditions related to low flows and increasing water temperatures.

Location	*Yet to Enter Delta (Upstream of Knights Landing)*	*In the Delta*	*Exited the Delta (Past Chipps Island)*
Young-of-year (YOY) winter-run Chinook salmon(naturally produced)	*Few stragglers only (last week: Same)*	*75 (last week: >85%)*	*25 (last week: < 15%)*
YOY winter-run Chinook salmon (hatchery-produced)	*0-5% (last week: 25% - 35%)*	*70% - 85% (last week: 65% - 75%)*	*~25% (last week: ~5%)*
YOY spring-run Chinook salmon	*5% - 20% (last week: same)*	*80% - 90% (last week: same)*	*< 10% (last week:same)*

*Yearling spring-run Chinook salmon**	*Few stragglers only (last week: same)*	*~40% (last week:60%-70%)*	*~60% (last week:30%-40%)*
*Hatchery Steelhead***	*~10% (last week: ~10% of all hatchery fish)*	*30% (last week: 60% all hatchery fish)*	*60% (last week: 30% all hatchery fish)*
Sacramento River steelhead (naturally-produced)	*Limited catch data*		
*San Joaquin River steelhead****	*~30% (last week: ~80%)*	*~60% (last week: ~20%)*	*10-15% (last week: same)*

** No yearling spring-run Chinook salmon have been caught in 2014 monitoring. In general, very few yearling spring-run Chinook salmon are observed because of their relatively large size and strong swimming (and associated gear avoidance) abilities.*

***Difficult to assess now that all hatchery releases are in the system (CNFH, Feather River Fish Hatchery, and Mokelumne Fish Hatchery released as usual; Nimbus Hatchery released their steelhead in the spring of 2014 because of expected unsuitable hatchery water temperatures during the summer of 2014). Percentages are intended to capture distribution of steelhead that migrate out; not those that may residualize.*

****Have not observed juvenile steelhead in monitoring data; Distribution estimates are based on 10 years of historical data from Mossdale Trawls, and RST data from Caswell Park on the Stanislaus River.*

DOSS Feedback on Entrainment Risk

<u>Entrainment risk of fish from the Sacramento River into the Interior Delta (same as last week except for tidal conditions)</u>

DOSS noted that generally, there is an increased risk of entrainment into the interior Delta during spring tides, compared to during neap tides, at any OMR level. During a spring tide, tidal conditions extend further upstream and may, for example, create conditions at Georgiana Slough (e.g. reverse flows) that are associated with routing into Georgiana Slough, a route to the interior Delta. Currently, spring tides are ending and the Delta is heading into neap tides.

<u>Entrainment risk of fish in the Interior Delta into the CVP/SWP facilities (same as last week)</u>

DOSS assessed the current risk of entrainment for YOY winter-run Chinook salmon. For both naturally-produced and hatchery-produced YOY winter-run in the Delta, the current risk of entrainment for each OMR flow ranges was characterized as follows:

- *-1,200 to -2,000 cfs has a medium risk of entrainment*
- *-2,000 to -3,500 cfs has a medium to high risk of entrainment*
- *-3,500 to -5,000 cfs has a high risk of entrainment*
- *more negative than -5,000 cfs has a higher risk of entrainment*

DOSS estimated a high risk of entrainment at OMR flows of -3,500 cfs or more negative than

-3,500 cfs, since salvage of salmonids (including 4 clipped Chinook -- in the winter-run size range based on the length-at-date criteria -- at the SWP on Monday, 2/23) has been observed over recent days at those OMR levels. The less negative ranges of OMR flow were considered to create medium or medium-high risk of entrainment because 1) currently there are physiological cues for migration (i.e. high temperatures) which increases the vulnerability of migrating fish across even the lower ranges of OMR; and 2) the threshold for exceeding a trigger is low, which means that even low salvage is associated with a fairly high risk of exceeding an OMR trigger.

Is it expected that more fish may move between now and early April, which could increase the risk of salvage, and a migration pulse could be triggered if there is a storm event.

- **SWG –** Group met today, agreed that given current distribution, salvage and Delta conditions, there is no indication that the projected combined exports of approx. 1500 cfs for this week (approx. -1700 cfs OMR average) need to be more restrictive to protect Delta smelt adults and larvae. Projected ops are also adequately protective of longfin smelt.

- **NMFS –** No determination needed.

- **USFWS –** No determination at this time.

- **DFW –** No determination.

SWRCB:

- **Division of Water Rights –** Nothing to report.
- **Office of Delta Watermaster** - Nothing to report.

2. WOMT Decisions - None